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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

CROSS. LATOYA I

ART UNIT

PAPER NUMBER

1743

DATE MAILED: 10/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/992,313

Applicant(s)

HALG,

Examiner

LaToya I. Cross

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) 30-43 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 24-27 is/are rejected.
- 7) ☒ Claim(s) 12-23, 28 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 5-14-02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Election/Restrictions

2. Applicant's election of group I, claims 1-29 in the reply filed on August 30, 2004 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: Claim 27 recites "pentane-2,4-dione-1,5-diol", for which there is no antecedent basis in the specification.

The specification is also objected to because Applicants refer to the claims in the Specification (page 7). It is suggested that instead of referring to claim 1 or claim 15, Applicants should incorporate the actual claim language in its place.

Claim Objections

4. Claims 12-23, 28 and 29 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim.

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See MPEP § 608.01(n). Accordingly, the claims 12-23, 28 and 29 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 3-8, 11 and 25 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 3, 4, 7 and 8 attempt to redefine what is already set forth in independent claims 1 and 2. Independent claims 1 and 2 recite that the complex is formed between ions in the chromophoric indicator and a ligand in the liquid sample. Claims 3 and 4 attempt to redefine this feature by stating that the sample liquid is added to a complex between the indicator and a ligand that is already formed. Claims 7 and 8 recites adding the indicator to the sample and dispensing the sample into a solution having chromogenic ligands. It is suggested that Applicants use broader language in claims 1 and 2, so that claims 3, 4, 7 and 8 further limit the broad claim.

Claims 5 and 6 recite "compensating volume is provided". It is unclear as to whether Applicants intend a compensating volume of sample, indicator or ligand. The same applies in claim 11, which recites "supplementary volume".

Claim 25 misspells the term "bathophenanthroline".

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 1-11, 24 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,061,639 to Lung et al in view of US Patent 5,320,969 to Bauer et al.

Lung et al disclose a method for determine the volume of liquid in a container. The method involves providing a first well having a known volume or colorimetric reagent of a known concentration. A volume of the colorimetric reagent is dispensed into a second well. In other words, a portion of the colorimetric reagent is separated from the first well and introduced into a second well. The absorbance of the reagent in each well is measured and the actual volume of the separated portion of the colorimetric reagent is calculated by correlating the known volume and concentration with the absorbance of the separated portion. See col. 3, lines 14-29. Lung et al further disclose adding a diluent to the colorimetric reagent to maintain

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the stability of the reagent (col. 4, lines 39-40). The colorimetric reagent disclosed by Lung et al comprises cobalt sulfate or potassium dichromate.

Lung et al differs from the instantly claimed invention in that Lung et al use a different colorimetric reagent than the chromophoric indicator and metal ion complex used in the instant invention.

Bauer et al teach a reagent composition comprising a complex formed from a polyvalent metal ion having a valence of at least two and an indicator capable of interacting with the metal ion to provide a polyvalent metal ion-indicator complex (col. 4, lines 50-58). As the polyvalent metal ion, Bauer et al teach using ferric and ferrous ions (col. 11, lines 41-50). As indicators, Bauer et al teach using bathophenanthroline, among others (col. 12, line 54 – col. 13, line 13). Bauer et al teach that the polyvalent metal ion-indicator complex has an advantage of undergoing a color transition that does not involve competing chemical or physical interaction, such as pH change or interactions with other components of a test sample (col. 4, line 68 – col. 5, line 3). It would have been obvious to one of ordinary skill in the art to substitute the colorimetric reagent of Lung et al for the polyvalent metal ion-indicator complex of Bauer et al to provide a reagent resulting in enhanced color transition independent of the sample condition (i.e. pH) and without interfering with other substances in the sample.

Lung et al also differs from the instant invention in that there is no disclosure of the sequence in which the reagents are added. Lung et al disclose adding the colorimetric reagent to the diluent and measuring the absorbance. There is no disclosure of, for example, adding the reagent to the residue, as opposed to the separated portion or adding the sample to a container already having the reagent. The sequence of the addition of reagents does not appear to have an effect on the method of determine the volume of a liquid itself. In the absence of new or

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unexpected results, the selection of any order of mixing ingredients or performing process step has been held to be *prima facie* obviousness. See MPEP 2144.04 citing In re Burhans, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) and In re Gibson, 39 F.2d 975, 5 USPQ 230 (CCPA 1930).

Allowable Subject Matter

10. Claims 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to teach or fairly suggest a method for determining the volume of liquid in a sample, wherein a chromogenic indicator is complexed with an ion and added to the sample at a known concentration, followed by measuring the absorbance of a portion of the sample, whereby B-diketones are additionally added as an auxiliary ligand.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to LaToya I. Cross whose telephone number is 571-272-1256. The examiner can normally be reached on Monday-Friday 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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